

**NATIONAL TRANSPORTATION SAFETY BOARD**  
**Public Meeting of November 5, 2013**  
**(Information subject to editing)**

**Highway–Railroad Grade Crossing Collision**  
**Midland, Texas**  
**November 15, 2012**

This is a synopsis from the Safety Board's report and does not include the Board's rationale for the conclusions, probable cause, and safety recommendations. Safety Board staff is currently making final revisions to the report from which the attached conclusions and safety recommendations have been extracted. The final report and pertinent safety recommendation letters will be distributed to recommendation recipients as soon as possible. The attached information is subject to further review and editing.

**EXECUTIVE SUMMARY**

About 4:35 p.m. central standard time on Thursday, November 15, 2012, in Midland, Texas, a freight train collided with a parade float at a highway–railroad grade crossing, resulting in 4 fatalities and 12 injuries.

The float, which consisted of a 2006 Peterbilt truck-tractor in combination with a 2005 Transcraft D-Eagle drop-deck flatbed semitrailer, was traveling southbound on South Garfield Street as part of a parade procession honoring US military men and women. The truck-tractor was driven by a 50-year-old male, and the flatbed was occupied by 12 veterans and each of their spouses. The float was flanked by two law enforcement escort vehicles.

The float continued along South Garfield Street until it reached the intersection of West Front Avenue, where the traffic signal displayed red. Law enforcement personnel stationed to block cross traffic permitted the float and its escorts to continue across the intersection unhindered. About 80 feet south of the West Front Avenue intersection was a highway–railroad grade crossing equipped with warning bells, warning lights, and an automatic gate assembly. As the float approached the grade crossing, the grade crossing warning system activated. The float continued across the railroad tracks at an estimated speed of 5 miles per hour (mph), and the grade crossing gate descended on the flatbed, striking several of the flag poles lining its right side.

At about the same time, a Union Pacific Railroad (Union Pacific) freight train, consisting of 4 locomotives and 84 loaded freight cars, approached the South Garfield Street crossing from the west at a speed of 62 mph. The engineer sounded the horn and placed the train into emergency braking as the front of the float crossed the tracks. The train reached the crossing and struck the right rear of the float, causing the flatbed to rotate clockwise 122 degrees. As the flatbed rotated, it struck several occupants who were evacuating the float. It also struck a

stationary 2008 Ford Crown Victoria occupied by a sheriff's deputy. The collision did not cause the train to derail.

As a result of the collision, four float passengers were killed. Eleven float passengers were injured, and the sheriff's deputy was also injured. The two train crewmembers, the float driver, and nine other float passengers were not injured.

The National Transportation Safety Board (NTSB) determines that the probable cause of this collision was the failure of the city of Midland and the parade organizer, "Show of Support, Military Hunt, Inc." (Show of Support), to identify and mitigate the risks associated with routing a parade through a highway–railroad grade crossing. Contributing to the collision was the lack of traffic signal cues to indicate to law enforcement that an approaching train had preempted the normal highway traffic signal sequence at the intersection of South Garfield Street and West Front Avenue. Further contributing to the collision was an expectancy of safety on the part of the float driver, created by the presence of law enforcement personnel as escorts and for traffic control, leading him to believe that he could turn his attention to his side-view mirrors to monitor the well-being of the parade float occupants as he negotiated a dip in the roadway on approach to the grade crossing.

This investigation focused on the following safety issues:

- **Driver expectations:** The float driver had been escorted by law enforcement vehicles throughout the parade. Law enforcement had blocked cross traffic at each major signalized highway intersection up to the grade crossing. With right-of-way seemingly established for the parade and with law enforcement escorts on both sides of his vehicle, the float driver diverted his attention from the roadway to attend to the well-being of his passengers as the float negotiated a dip in the road ahead of the grade crossing.
- **Awareness of traffic signal preemption:** Law enforcement escorts were not aware that the highway traffic signal on approach to West Front Avenue had been preempted by an approaching train.
- **Parade planning:** Show of Support had not obtained a parade permit since 2009. The Show of Support parade committee did not have a written<sup>[VC-CAH]</sup> safety plan detailing how the parade was to be organized and executed, nor was Union Pacific informed of the parade schedule and route.

As a result of this investigation, the NTSB makes recommendations to the Federal Highway Administration, Federal Railroad Administration, city of Midland, National League of Cities, National Association of Counties, National Association of Towns and Townships, United States Conference of Mayors, International City/County Management Association, and International Festivals and Events Association.

## CONCLUSIONS

1. Emergency response, vehicle maintenance, motor carrier and train operation, and railway infrastructure were not factors in the grade crossing collision or resulting injuries.
2. Participation in the parade and law enforcement control of the parade route created an expectation on the part of the float driver that it was safe to continue through the grade crossing.
3. The float driver did not see the flashing lights of the grade crossing warning system or detect the presence of the train until the float was on the tracks because he was looking at his side-view mirrors to monitor the well-being of the float passengers.
4. The float driver's ability to monitor the scene around him was not hampered by sun glare or by the tinted windows of his vehicle.
5. The float driver's expectation of safety, combined with the noise generated by the parade, likely reduced the driver's ability to hear or properly interpret the grade crossing system warning bells and train horn.
6. The float driver was not distracted by the use of in-vehicle electronic devices.
7. There is no evidence that the float driver was driving under the influence of alcohol or drugs of abuse.
8. There is no evidence that the float driver was experiencing stress or had a health, hearing, or visual condition that affected his ability to perceive the grade crossing warnings, perceive the train, or safely operate his vehicle.
9. Based on evidence and statements regarding the float driver's medical history, sleep opportunity, sleep quality, sleep schedule, and time awake, it is unlikely that he was fatigued at the time of the collision.
10. The grade crossing warning system provided 20 seconds of warning as required by federal regulations.
11. Had visual cues been available to signify that an approaching train had preempted the normal highway traffic signal sequence at the intersection of South Garfield Street and West Front Avenue, there would have been as much as 10 seconds of additional time to warn law enforcement officers and the float driver of the approaching train.
12. Confirmation lights and movement-activated blank-out signs can help law enforcement and emergency responders quickly determine whether an approaching train has preempted a highway traffic signal and might have alerted law enforcement escorts sooner of the need to stop the parade to avoid the approaching train.
13. The city of Midland failed to follow and enforce its own ordinances, and allowed the Show of Support parade to take place without a permit from 2009 to 2012.

14. With the exception of avoiding the grade crossing entirely, the most effective way for the city of Midland and Show of Support, Military Hunt, Inc. to have prevented a grade crossing collision would have been to notify the railroad in advance of the parade.
15. The absence of ordinances or laws addressing risks related to parades and other events traversing a grade crossing poses a safety hazard for event participants and spectators.
16. The failure of Show of Support, Military Hunt, Inc.; the Midland Police Department; and other parade committee members to develop and implement a written safety plan covering all aspects of the parade led to a failure to manage the safety hazards along the parade route.
17. A safety plan that followed common parade float operation practices could have prevented the circumstances that led to this collision.
18. Many communities and organizations engaged in parade and special event planning fail to develop and implement a written safety plan.

## **PROBABLE CAUSE**

The National Transportation Safety Board determines that the probable cause of this collision was the failure of the city of Midland and the parade organizer, “Show of Support, Military Hunt, Inc.,” to identify and mitigate the risks associated with routing a parade through a highway–railroad grade crossing. Contributing to the collision was the lack of traffic signal cues to indicate to law enforcement that an approaching train had preempted the normal highway traffic signal sequence at the intersection of South Garfield Street and West Front Avenue. Further contributing to the collision was an expectancy of safety on the part of the float driver, created by the presence of law enforcement personnel as escorts and for traffic control, leading him to believe that he could turn his attention to his side-view mirrors to monitor the well-being of the parade float occupants as he negotiated a dip in the roadway on approach to the grade crossing.

## **RECOMMENDATIONS**

### **New Recommendations**

As a result of its investigation into this collision, the National Transportation Safety Board makes the following recommendations.

#### **To the Federal Highway Administration:**

1. Work with the Federal Railroad Administration to (1) include guidance in the *Manual on Uniform Traffic Control Devices* (MUTCD) for the installation of advance warning devices, such as movement-activated blank-out signs, that specifically use the word “train” to indicate the preemption of highway traffic signals by an approaching train, and (2) amend the MUTCD to indicate that

preemption confirmation lights, while not intended to provide guidance to the general public, would be useful in providing advance information on train movements to law enforcement and emergency responders.

**To the Federal Railroad Administration:**

2. Work with the Federal Highway Administration to (1) include guidance in the *Manual on Uniform Traffic Control Devices* (MUTCD) for the installation of advance warning devices, such as movement-activated blank-out signs, that specifically use the word “train” to indicate the preemption of highway traffic signals by an approaching train, and (2) amend the MUTCD to indicate that preemption confirmation lights, while not intended to provide guidance to the general public, would be useful in providing advance information on train movements to law enforcement and emergency responders.

**To the city of Midland, Texas:**

3. Include in your city ordinances a requirement that all organizations create a safety plan as part of the city’s event and parade approval process, to include, at a minimum, the following elements: route selection, mitigation of unavoidable hazards, lines of communication among event participants, notification of railroads or other entities with control over possible hazards, development of operating and emergency procedures, and a safety briefing for vehicle operators.

**To the National League of Cities, National Association of Counties, National Association of Towns and Townships, United States Conference of Mayors, and International City/County Management Association:**

4. Encourage your members to require, as part of the parade and special event approval process, that organizations create a written safety plan, which, at a minimum, addresses the following elements: risk mitigation and contingency planning, with provisions for communication among event participants and other stakeholders; safety briefings for event participants and other stakeholders; driver and vehicle screening; safe float operation; and notification of railroads or other entities with control over possible hazards.

**To the International City/County Management Association:**

5. With the assistance of the International Festivals and Events Association, National League of Cities, and National Association of Counties, develop and disseminate a list of key elements that state and local officials can use as a resource to create guidelines, standard operating procedures, or ordinances for the safe planning and operation of parades and other special events.

**To the International Festivals and Events Association, National League of Cities, and**

**National Association of Counties:**

6. Assist the International City/County Management Association in developing and disseminating a list of key elements that state and local officials can use as a resource to create guidelines, standard operating procedures, or ordinances for the safe planning and operation of parades and other special events.